From: Julie Ainsworth-Taylor
To: Davis, Kris
Subject: Supplemental Comments - BSRE Point Wells Urban Center Hearing
Date: Friday, June 01, 2018 10:42:32 AM
Attachments: Shoreline Cover - Shannon & Wilson.pdf
Shoreline Geotechnical and Permit Supplemental Comments.pdf

Snohomish County Hearing Examiner:

Attached please find supplemental comments from the City of Shoreline.

Julie Ainsworth-Taylor
Assistant City Attorney
206-801-2222 Work
206-801-2781 Fax
jainsworth-taylor@shorelinewa.gov

Q-5 City of Shoreline Geotechnical Comments
PFN: 11 101457 LU

OFFICE OF THE CITY ATTORNEY

Margaret King, City Attorney

June 1, 2018

The Honorable Peter Camp, Hearing Examiner
Snohomish County
Office of Hearings Administration
3000 Rockefeller Ave M/S 405
Everett, WA 98201

VIA EMAIL: hearing.examiner@snoco.org

RE: BSRE Point Wells LP Urban Center Application
Hearing Dates May 16, 2018 – May 24, 2018

The Honorable Peter Camp:

For inclusion in the record of the above referenced matter, attached please find supplemental comments, dated May 31, 2018, from Shannon & Wilson, the City of Shoreline's Geotechnical and Environmental Consultants in regards to the BSRE Point Wells Urban Center Application.

Thank you for allowing the City of Shoreline to provide additional comments.

Sincerely,

CITY OF SHORELINE

//Julie Ainsworth-Taylor

Julie Ainsworth-Taylor

Assistant City Attorney

Attachment

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

May 31, 2018

Ms. Margaret King
City of Shoreline
17500 Midvale Avenue N.
Shoreline, WA 98133

RE: GEOTECHNICAL AND ENVIRONMENTAL COMMENTS REGARDING PROPOSED POINT WELLS REDEVELOPMENT, SNOHOMISH COUNTY, WASHINGTON

Dear Ms. King:

This letter report presents our review comments on the geotechnical and environmental aspects of the proposed redevelopment at Point Wells in Snohomish County, Washington. We understand that the Point Wells project is in Snohomish County, but most of the traffic to and from the site would be through the City of Shoreline (Shoreline). Other public services in Shoreline would also be impacted by the proposed project. The purpose of our geotechnical/ geologic/environmental services is to provide Shoreline with technical expertise that it does not have in house related to geotechnical and geologic aspects of the project. In addition, we have commented on some issues associated with the site contamination and State Environmental Policy Act (SEPA) regulations defining a single and complete project as it relates to the proposed project.

As part of our services for Shoreline, we attended two days of hearings at the Snohomish County Administration Building and reviewed the following documents:

- Hart Crowser, April 20, 2018, Subsurface Conditions Report, Point Wells Redevelopment, Snohomish County, Washington.
- Hart Crowser, May 15, 2018, Landslide Deviation Request Information, Point Wells Redevelopment, Unincorporated Snohomish County, Washington.
- MIG/SvR, April 19, 2018, Point Wells Second Access Exhibit.

400 NORTH 34TH STREET, SUITE 100
P.O. BOX 300303
SEATTLE, WASHINGTON 98103
206-632-8020 FAX 206-695-6777
TDD 1-800-833-6388
www.shannonwilson.com

- Perkins+Will, April 28, 2018, Point Wells Redevelopment Preliminary Short Plat Subdivision.
- Snohomish County Departments of Planning & Development Services and Public Works, May 9, 2018, Supplemental Staff Recommendations, Point Wells Urban Center.
- Snohomish County Departments of Planning & Development Services and Public Works, April 17, 2018, Staff Recommendations, Point Wells Urban Center.
- City of Shoreline, May 16, 2018, BSRE Point Wells LP Urban Center Application, Hearing Date May 16, 2018.
- Sleight, R. R., May 9, 2018, Landslide Hazard Area Deviation Request Dated April 24, 2018.

Based on the Snohomish County hearings and review of the documents, it is our opinion that there are four areas of the development or the development process that are in conflict with the Snohomish County code or require additional investigation or analysis at this stage of the development. The four issues are (1) liquefaction, (2) second access road, (3) Urban Plaza buildings, and (4) level of design/analysis.

Preliminary explorations and analysis indicate that the site soils are likely to liquefy during seismic shaking. The proponent states that this condition will need to be mitigated during design and construction. An analysis is presented for shaking based on the Seattle Fault to the south of the site; however, no analysis is presented to show whether the Seattle Fault or the Southern Whidbey Island Fault Zone controls the seismic design at the site. Such a seismicity analysis should have been performed.

The Hart Crowser subsurface conditions report states that deep foundations for structures could be a viable option to ground improvement in the liquefaction-prone areas. However, if the deep foundations are chosen for the buildings, areas other than those structures, including crucial lifelines such as critical utilities and roads, would still be susceptible to liquefaction.

There are several issues of concern about the level of design for the second access road. The second access road plan submitted on May 19, 2018, is basically a sketch with no profile and does not include information on grading and/or support that may be necessary to construct the road. The hillside on which the road is proposed is unstable, as shown in submitted maps and as indicated by the preliminary slope stability analysis. Subdrainage is listed in the Hart Crowser reports as a key to increasing the stability of the slope to an acceptable level; however, the

locations of drainage are not presented. The only subdrainage recommendations are general in nature, and insufficient evidence is available to ascertain what type of subdrainage could be effective. Furthermore, the subdrainage improvements would need to be on land that the project proponent does not own or have an easement.

The subject slope was not completely reconnoitered. The Hart Crowser report states, "the reconnaissance was limited to areas that were readily accessible and did not include a detailed survey of the slope." It further states that slope vegetation limited "observation of significant geologic contacts." This level of reconnaissance is not acceptable for assessing the feasibility of the proposed project.

Hart Crowser analyzed the global stability of one cross section in the slope above the Urban Plaza. This is insufficient information on which to determine the stability of the slope and the effects of the proposed facilities on slope stability. In our opinion, at least two additional cross sections, one of which is along Chevron Creek, should be analyzed at this stage of design to account for variations in topography, soil conditions, and groundwater conditions. Such analyses should consider the cuts and fills needed in order to construct the access road. We understand that a potential alternative is to move the Urban Plaza buildings to the western edge of this area. If so, then other structures, such as those related to the transportation center, would be in the landslide hazard zone.

The analysis produced by Hart Crowser indicates that the foundation and slab of the proposed building will provide lateral resistance against slope instability for the second access road wall and fill; however, the buildings will not be built until the project's second phase. Although Hart Crowser explained a complicated construction process at the Snohomish County hearing, the construction steps and the stability assessments of these intermediate stages have not been documented or presented. Furthermore, if the buildings are moved to the western side of the Urban Plaza (a noted potential alternative), the floor slab component of the resisting force will be lost.

Groundwater pressures are a significant influence on the instability of slopes. Proper groundwater pressure measurements and hydrogeologic interpretation are necessary for an accurate assessment of slope stability, especially in complex hydrogeologic environments such as those that exist in the slopes in the project vicinity. Hart Crowser installed a series of vibrating wire piezometers (VWPs) in borings HC-1, HC-10, HC-11, and HC-12. The

measurements from these instruments were used to inform the global stability analyses performed for cross sections B-B' and G-G'. Hart Crowser recognizes the complexity of the hydrogeologic environment and notes the presence of multiple piezometric surfaces within the slope. Their method of interpreting these surfaces and integrating them into their global stability analyses is inconsistent. In one case (B-B'), four independent piezometric surfaces are modelled, but in the other (G-G'), only one (the highest) is modeled. We recommend the analysis techniques be consistent. Secondly, in the case where multiple piezometric surfaces are modelled (B-B'), the associated groundwater pressures "were only applied to the adjacent sandy layers in the model." We disagree with this interpretation and its reasoning. Hart Crowser makes this crucial assumption based only on their "assumed presence of sand layers within the Lawton Clay" and not on measurements, observations, or soil samples. In fact, even if the VWPs in the Lawton Clay unit were measuring groundwater pressures in sand layers, we would still expect there to be groundwater pressure present in the Lawton Clay itself. Thirdly, it appears that no VWPs were installed in the glacial outwash/Qpnf soil unit underlying the Lawton Clay in the borings associated with the global stability analyses. Confined or artesian groundwater pressures are commonly observed in situations such as those present at the site (i.e., high-permeability soil unit underlying an aquitard with significant nearby topographic relief). In fact, Hart Crowser noted the presence of "shallow surface water and/or artesian conditions" at the base of the slope. Hart Crowser's global stability analyses should address this possibility. Lastly, given the complex hydrogeologic regime at the site and its critical influence on slope stability, it is our opinion that a groundwater seepage model and analyses be performed coupled with the global slope stability analyses. Such seepage analyses, using the observed groundwater pressures, would more accurately model the groundwater conditions in the slope and provide better groundwater pressure input to the global stability analyses.

Next to groundwater pressures, selection of soil strength values is of utmost importance in global slope stability analysis. For the subject slopes, the soil strength parameters selected for the Lawton Clay, in particular, will greatly influence the analyses results. Hart Crowser used two different sets of Lawton Clay strength parameters – one for Cross Section B-B' and another for Cross Section G-G'. Given that no soil strength tests were performed, the reasoning for the different soil strengths should be explained and justified. Secondly, the Lawton Clay strengths used appear to be for "intact" Lawton Clay. Once a clay has been disturbed (sheared), its strength will lessen considerably. Given the historic landsliding documented at the project site and given the documented slickensides in the boring logs (evidence of shearing), the use of lower

"fully softened" or residual shear strengths should be considered by the geotechnical engineer. Further, Hart Crowser should document the basis for their selection of the type of shear strength (e.g., peak/intact, fully softened, residual) used for the Lawton Clay in their analyses.

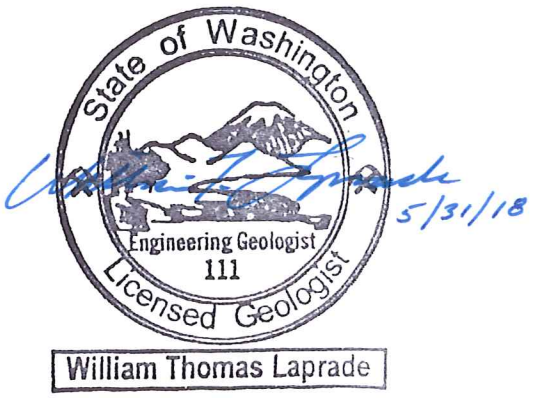
The applicant has not demonstrated how contaminated soils on site will impact the design and construction associated with ground improvement, deep foundations, groundwater and dewatering requirements, and the feasibility of containing the contamination from migrating or further impacting the environment. They suggest that the site will be cleaned up over the next 10 to 15 years under a separate remediation plan subject to Washington State Department of Ecology (Ecology) review and approval, but have not provided any reasonable assurance that the proposed development would be compatible with the cleanup and how the site remediation is compatible with project feasibility or county code. The remediation must be integrated with the potential future uses of the site to determine whether the proposed uses can even be compatible with the site and whether they can meet residential soil standards.

Under Washington Administrative Code 197-11-060(3)(b)(i) and adopted by reference under Snohomish County Code 30.61.020, the project proposal must be properly defined. Subsection (b) states in part, "proposals that are related to each other closely enough to be, in effect, a single course of action shall be evaluated in the same environmental document" assuming the proposal (i), cannot proceed unless the other proposal is implemented simultaneously with it. In the County staff report, they note that the applicant has stated that the site will be remediated under a separate remediation plan subject to review and approval by Ecology and that will require local land use permits from the County. Additionally, it appears that phases of the proposed project are proposed to go forward before cleanup has been completed or adequately addressed, since cleanup is predicted to take 10 to 15 years. This project cannot be completed without site remediation and therefore site cleanup must be discussed as part of the overall project as defined by SEPA regulations.

In general, it is our opinion that the reports and plans that have been presented by the proponent lack specificity or are not addressed in their proposal. Design of the key parts of the project have been deferred to "final design" or will be addressed under separate project review, in the case of site cleanup, and information provided by the applicant is not sufficient to judge the feasibility of the proposed project.

Sincerely,

SHANNON & WILSON, INC.



Michael D. Harney, PE
Senior Associate

William T. Laprade, LEG
Senior Vice President

Katie Walter, PWS
Vice President

WTL:MDH:KLW/wtl